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10/549,896	09/20/2005	Benny Moonen	118744-149	7140

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EXAMINER	
HUSSAIN, IMAD	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/549,896	MOONEN, BENNY	
	Examiner	Art Unit	
	IMAD HUSSAIN	2451	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 April 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment dated 27 April 2009 has been received and made of record.

2. New claim 11 has been added.

3. Claims 1-11 are currently pending in Application 10/549896.

Response to Arguments

4. Applicant's arguments filed 27 April 2009 have been fully considered but they are not persuasive.

Applicant argues that Stevens does not teach *a confirmation of receipt, transmitted on receipt of the first number of user data packets, but received after the second number of data packets are transmitted.*

Applicant has not clearly pointed out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, Applicant's arguments do not show how the amendments avoid such references or objections. As such, Applicant's arguments do not comply with 37 CFR 1.111(c). However, Examiner will attempt to address Applicant's arguments as best understood by Examiner.

Examiner notes and understands that neither of the example diagrams provided in the Stevens reference, taken independently of each other and the mechanisms that they illustrate, explicitly disclose the Applicant's invention as recited in claim 1.

However, Stevens, taken as a whole, does teach the claim limitations, including *a confirmation of receipt, transmitted on receipt of the first number of user data packets, but received after the second number of data packets are transmitted*. This is true even during the slow-start phase of Stevens.

Examiner proposes an illustrative example based on the teachings of Stevens.

Referring back to figure 21.2, Applicant is correct in stating that the window size is increased by one upon receipt of an acknowledgement for a previously outstanding group of packets. However, while cited figure only shows a window size of three, the teachings of Stevens are not so limited.

Suppose, for purposes of this example, that the window has reached a size of four packets (still during the slow-start phase). Four packets are transmitted and outstanding: packets W, X, Y and Z. As each packet is received by the receiver, a cumulative acknowledgement that confirms the receipt of all packets up to and including said packet is sent by the receiver to the transmitter.

Thus, it is the case that a cumulative acknowledgement of packets W, X, Y and Z could only be transmitted after packet Z is received. This acknowledgement is also *a confirmation of receipt transmitted on receipt of the first number of user data packets from the receiver*, in the case that the "first number of user data packets" constitutes packets W and X and the "second number of user data packets" constitutes packets Y and Z. Clearly packets Y and Z have been transmitted before the receipt of this confirmation, per the claim language.

Applicant asserts that Stevens "does not teach or suggest… transmitting a second number of user data packets... before receiving at the transmitter a confirmation of receipt of the first number of user data packets, as required by Applicant's claims."

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant states that in figure 21.2, that "although the packet sent at point 4 is still outstanding when the packets at points 6 and 7 are sent, the packets sent at points 6 and 7 are being sent as a direct response to a confirmation acknowledging the receipt of the packet sent at point 3 in Stevens."

Examiner does not disagree with this statement.

Applicant uses this fact to advance the assertion that "the packets at points 6 and 7 are not transmitted before there has been received 'a confirmation of receipt transmitted on receipt of [a] first number of user data packets'."

Applicant then draws the conclusion that Stevens "does not teach or suggest… transmitting a second number of user data packets... before receiving at the transmitter a confirmation of receipt of the first number of user data packets, as required by Applicant's claims."

However, claim 1 is not worded in such a fashion. Instead, claim 1 recites "transmitting a second number of user data packets… at a later time… wherein the later

time is defined such that it is before a time of receipt of [a] confirmation of receipt by the transmitter of the user data packets."

Examiner emphasizes that due to the nature of cumulative acknowledgements in TCP, there is not a single unique confirmation for any particular packet, but a *number* of such confirmations. In this case, "ack 1537" (please refer back to figure 21.2) is not only a confirmation of packet 1537 (the packet transmitted at point 9), but also a confirmation of receipt of packets 257 (point 1), 513 (point 3), 769 (point 4), 1025 (point 6) and 1281 (point 7). Clearly a "second number of user data packets" (the set transmitted at points 6 and 7) is transmitted before the receipt of "ack 1537" (a confirmation of receipt of packets sent at points 3 and 4, among others).

Therefore, given the language of the claim limitations, it remains Examiner's position that Stevens teaches the claimed invention.

Claim Objections

5. Applicant is advised that should claim 7 be found allowable, claim 11 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5, 7 and 11 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by W. R. Stevens ("TCP Timeout and Retransmission", listed on applicant's IDS, hereafter *Stevens*).

Regarding claims 1 and 8, Stevens discloses *a device* [Page 301 Section 21.4, hosts slip and vangogh with respective timers] and associated *method of performing a slow start algorithm for transmitting a series of user data packets from a transmitter to a receiver using a TCP protocol, comprising:*

transmitting, at the start of the user data transmission, a first number of user data packets from the series of user data packets to the receiver [Fig 21.2, segment 4; Fig 21.7, packets transmitted from the transmitter at points 48 and 50]*;*

transmitting, during transmission of a plurality of user data packets, the user data packets directly one after the other as the first number of user data packets, and not transmitting user data packets to the receiver for a time period after transmitting the first number of user data packets [Fig 21.2, interval RTT #2; Fig 21.7, time between points 50 and 52]*;*

transmitting a second number of user data packets from the series of user data packets to the receiver at a later time [Fig 21.2, segments 6 and 7; Fig 21.7, packets transmitted from the transmitter at points 52, 54 and 55]*; and*

receiving a confirmation of receipt transmitted on receipt of the first number of user data packets from the receiver [Fig 21.2, segment 5] *wherein the later time is defined such that it is before a time of receipt of the confirmation of receipt by the transmitter of the user data packets*.

Regarding claim 2, Stevens discloses that *the later time is defined such that the receiver receives the second number of user data packets* [Fig 21.2, segments 6 and 7] *after transmitting the confirmation of receipt* [Fig 21.2, segment 5].

Regarding claims 3 and 9, Stevens discloses that *the time period is a function of a time difference between transmission of a data packet by the transmitter and receipt of the data packet by the receiver* [Section 21.4, Round-Trip Time Measurements, wherein round-trip time approximates twice the time difference between the transmission by the transmitter and receipt by the receiver].

Regarding claim 5, Stevens discloses that *the user data packets are data from the internet* [Section 21.4, paragraph 3].

Regarding claim 7, Stevens discloses that *the second number* [Fig 21.2, segments 6 and 7] *of user data packets exceeds the first number* [Fig 21.2, segment 4] *of user data packets* [see also Section 21.4, Slow Start, wherein the congestion window size starts small and is incremented for later transmissions].

Regarding claim 11, Stevens discloses *a method of performing a slow start algorithm for transmitting a series of user data packets from a transmitter to a receiver using a TCP protocol, comprising:*

transmitting, at the start of the user data transmission, a first number of user data packets from the series of user data packets to the receiver [Fig 21.2, segment 4; Fig 21.7, packets transmitted from the transmitter at points 48 and 50]*;*

transmitting, during transmission of a plurality of user data packets, the user data packets directly one after the other as the first number of user data packets, and not transmitting user data packets to the receiver for a time period after transmitting the first number of user data packets [Fig 21.2, interval RTT #2; Fig 21.7, time between points 50 and 52]*;*

transmitting a second number of user data packets from the series of user data packets to the receiver at a later time [Fig 21.2, segments 6 and 7; Fig 21.7, packets transmitted from the transmitter at points 52, 54 and 55], *the second number* [Fig 21.2, segments 6 and 7] *of user data packets being greater than the first number* [Fig 21.2, segment 4] *of user data packets* [see also Section 21.4, Slow Start, wherein the congestion window size starts small and is incremented for later transmissions]*; and*

receiving a confirmation of receipt transmitted on receipt of the first number of user data packets from the receiver [Fig 21.2, segment 5] *wherein the later time is defined such that it is before a time of receipt of the confirmation of receipt by the transmitter of the user data packets* ["ack 1537" is not only a confirmation of packet 1537 (the packet transmitted at point 9), but also a confirmation of receipt of packets 257 (point 1), 513 (point 3), 769 (point 4), 1025 (point 6) and 1281 (point 7)].

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-3, 5, 7 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Jose Joaquin Garcia-Luna-Aceves et al. (US 2002/0089930 A1, hereinafter *Aceves*).

Regarding claims 1 and 8, Stevens discloses *a device* [Page 301 Section 21.4, hosts slip and vangogh with respective timers] and associated *method of performing a slow start algorithm for transmitting a series of user data packets from a transmitter to a receiver using a TCP protocol, comprising:*

transmitting, at the start of the user data transmission, a first number of user data packets from the series of user data packets to the receiver [Fig 21.2, segment 4; Fig 21.7, packets transmitted from the transmitter at points 48 and 50]*;*

transmitting, during transmission of a plurality of user data packets, the user data packets directly one after the other as the first number of user data packets, and not transmitting user data packets to the receiver for a time period after transmitting the first number of user data packets [Fig 21.2, interval RTT #2; Fig 21.7, time between points 50 and 52]*;*

transmitting a second number of user data packets from the series of user data packets to the receiver at a later time [Fig 21.2, segments 6 and 7; Fig 21.7, packets transmitted from the transmitter at points 52, 54 and 55]*; and*

receiving confirmation of receipt transmitted on receipt of the first number of user data packets from the receiver [Fig 21.2, segment 5] *wherein the later time is defined such that it is before a time of receipt of the confirmation of receipt by the transmitter of the user data packets*.

Stevens does not explicitly disclose receiving *a* (single) confirmation of receipt for the first number of user data packets.

However, Aceves teaches receiving *a* (single) confirmation of receipt for the first number of user data packets [Aceves: Paragraph 0044].

Stevens and Aceves are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the delayed

acknowledgement scheme of Aceves for sending a single acknowledgement for multiple packets in the system of Stevens. One of ordinary skill in the art would have been motivated to modify the system of Stevens with the delayed acknowledgement scheme of Aceves because in doing so, the system would allow for less bandwidth used by acknowledgements.

Regarding claim 2, the combination of Stevens and Aceves (hereinafter *Stevens-Aceves*) discloses that *the later time is defined such that the receiver receives the second number of user data packets* [Fig 21.2, segments 6 and 7] *after transmitting the confirmation of receipt* [Fig 21.2, segment 5].

Regarding claims 3 and 9, Stevens-Aceves discloses that *the time period is a function of a time difference between transmission of a data packet by the transmitter and receipt of the data packet by the receiver* [Section 21.4, Round-Trip Time Measurements, wherein round-trip time approximates twice the time difference between the transmission by the transmitter and receipt by the receiver].

Regarding claim 5, Stevens-Aceves discloses that *the user data packets are data from the internet* [Section 21.4, paragraph 3].

Regarding claim 7, Stevens-Aceves discloses that *the second number* [Fig 21.2, segments 6 and 7] *of user data packets exceeds the first number* [Fig 21.2, segment 4]

of user data packets [see also Section 21.4, Slow Start, wherein the congestion window size starts small and is incremented for later transmissions].

Regarding claim 11, Stevens discloses *a method of performing a slow start algorithm for transmitting a series of user data packets from a transmitter to a receiver using a TCP protocol, comprising:*

transmitting, at the start of the user data transmission, a first number of user data packets from the series of user data packets to the receiver [Fig 21.2, segment 4; Fig 21.7, packets transmitted from the transmitter at points 48 and 50]*;*

transmitting, during transmission of a plurality of user data packets, the user data packets directly one after the other as the first number of user data packets, and not transmitting user data packets to the receiver for a time period after transmitting the first number of user data packets [Fig 21.2, interval RTT #2; Fig 21.7, time between points 50 and 52]*;*

transmitting a second number of user data packets from the series of user data packets to the receiver at a later time [Fig 21.2, segments 6 and 7; Fig 21.7, packets transmitted from the transmitter at points 52, 54 and 55], *the second number* [Fig 21.2, segments 6 and 7] *of user data packets being greater than the first number* [Fig 21.2, segment 4] *of user data packets* [see also Section 21.4, Slow Start, wherein the congestion window size starts small and is incremented for later transmissions]*; and*

receiving a confirmation of receipt transmitted on receipt of the first number of user data packets from the receiver [Fig 21.2, segment 5] *wherein the later time is*

defined such that it is before a time of receipt of the confirmation of receipt by the transmitter of the user data packets ["ack 1537" is not only a confirmation of packet 1537 (the packet transmitted at point 9), but also a confirmation of receipt of packets 257 (point 1), 513 (point 3), 769 (point 4), 1025 (point 6) and 1281 (point 7)].

Stevens does not explicitly disclose receiving *a* (single) confirmation of receipt for the first number of user data packets.

However, Aceves teaches receiving *a* (single) confirmation of receipt for the first number of user data packets [Aceves: Paragraph 0044].

Stevens and Aceves are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the delayed acknowledgement scheme of Aceves for sending a single acknowledgement for multiple packets in the system of Stevens. One of ordinary skill in the art would have been motivated to modify the system of Stevens with the delayed acknowledgement scheme of Aceves because in doing so, the system would allow for less bandwidth used by acknowledgements.

10. Claims 4, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens as applied to claims 1 and 8 above in further view of Karlsson et al (US 6,222,829 B1, hereafter *Karlsson*).

Regarding claims 4 and 10, Stevens-Aceves does not explicitly disclose that *the user data packets are transmitted by the transmitter to the receiver at least to some degree by radio*.

Karlsson discloses that "data packets associated with the packet data service are carried across the mobile radio network using packet-switched communications on a packet channel. For example… using TCP/IP" (Karlsson, column 1, lines 24-35).

Stevens and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of Karlsson for sending packets wirelessly in the system of Stevens. One of ordinary skill in the art would have been motivated to modify the system of Stevens with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

Regarding claim 6, Stevens-Aceves does not explicitly disclose that *the receiver is part of a mobile radio communication system, and the transmitter is a device connected both to the mobile radio communication system and another network using a TCP protocol*.

Karlsson discloses that "packet data services are used to connect digital terminal equipment, such as a personal computer communicating through a mobile station operating in the mobile radio network, to an Internet Protocol (IP) communication network such as, for example, an Internet or an Intranet… For example, data packets can be carried on the packet channel using a Transmission Control Protocol/Internet

Protocol (TCP/IP)" (Karlsson, column 1, lines 17-35, where the personal computer is the receiver and a node on the Internet is the transmitter).

Stevens and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of Karlsson for sending packets wirelessly in the system of Stevens. One of ordinary skill in the art would have been motivated to modify the system of Stevens with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

11. Claims 4, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens-Aceves as applied to claims 1 and 8 above in further view of Karlsson et al (US 6,222,829 B1, hereafter *Karlsson*).

Regarding claims 4 and 10, Stevens-Aceves does not explicitly disclose that *the user data packets are transmitted by the transmitter to the receiver at least to some degree by radio*.

Karlsson discloses that "data packets associated with the packet data service are carried across the mobile radio network using packet-switched communications on a packet channel. For example… using TCP/IP" (Karlsson, column 1, lines 24-35).

Stevens-Aceves and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of

Karlsson for sending packets wirelessly in the system of Stevens-Aceves. One of ordinary skill in the art would have been motivated to modify the system of Stevens-Aceves with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

Regarding claim 6, Stevens-Aceves does not explicitly disclose that *the receiver is part of a mobile radio communication system, and the transmitter is a device connected both to the mobile radio communication system and another network using a TCP protocol*.

Karlsson discloses that "packet data services are used to connect digital terminal equipment, such as a personal computer communicating through a mobile station operating in the mobile radio network, to an Internet Protocol (IP) communication network such as, for example, an Internet or an Intranet… For example, data packets can be carried on the packet channel using a Transmission Control Protocol/Internet Protocol (TCP/IP)" (Karlsson, column 1, lines 17-35, where the personal computer is the receiver and a node on the Internet is the transmitter).

Stevens-Aceves and Karlsson are analogous art in the same field of endeavor as both describe TCP performance techniques. It would have been obvious for one of ordinary skill in the art at the time the invention was made to utilize the radio scheme of Karlsson for sending packets wirelessly in the system of Stevens-Aceves. One of ordinary skill in the art would have been motivated to modify the system of Stevens-Aceves with the radio scheme of Karlsson because in doing so, the system would allow for mobile communication.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to IMAD HUSSAIN whose telephone number is (571) 270-3628. The examiner can normally be reached on Monday through Friday from 0800 to 1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/IH/
Imad Hussain
Examiner, Art Unit 2451

/Salad Abdullahi/

Primary Examiner, Art Unit 2457